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09/540,394	03/31/2000	William Alan Holder	END9-2000-0013-US1	2193

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EXAMINER

WOOD, WILLIAM H

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 03/09/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,394

Applicant(s)

HOLDER ET AL.

Examiner

William H. Wood

Art Unit

2124

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-14, 16-25 and 27-40 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☐ Claim(s) 1-4, 6-14, 16-25 and 27-40 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-4, 6-14, 16-25 and 27-40 are pending and have been examined.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5-8, 10, 15-18, 20, 21, 26-29, 31 and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the product System/390 mainframe from IBM (announced September 5, 1990) illustrated here by "System/390 Announcement" (referred to as **System**) and "Principles of Operation: Enterprise Systems Architecture/390" (referred to as **ESA**) in view of **Coutant** (USPN 6,293,712).

In regard to claim 1, **System/390** disclosed the limitations:

- ♦ *A method of communicating between programs having different machine context organizations (**System**: page 1, paragraph 6, "The new ESA/390 ...", and page 2, first paragraph under "Major Software Advances"; **ESA**: page 5-10 to 5-16), said method comprising:*
 - ♦ *selecting, at compile time, a linkage service from a plurality of linkage services to be used in communicating between said calling program and a callee program, wherein said calling program and said callee program*

coexist within a single executable module but have different machine context organizations (ESA: page 5-14, left column, third paragraph)

System/390 did not explicitly disclose *determining, at compile time, which savearea layout of a plurality of savearea layouts is to be used to save information relating to a calling program*. **Coutant** demonstrated that it was known at the time of invention to implement systems with variable size stack frames or "plurality of savearea layouts" (Abstract; column 2, lines 5-12). It would have been obvious to one of ordinary skill in the art at the time of invention to implement a processor with a plurality of linkage services such as **System/390** with multiple savearea layouts as found in **Coutant's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to store only information which is necessary for the operation being performed (**Coutant**: column 2, lines 5-12).

In regard to claim 5 (now within the independent claim), IBM's **System/390** and **Coutant** disclosed the limitation *wherein said selecting is based upon the determined savearea layout* (linkage service based on save area must be selected in order to properly send/retrieve the desired saved information to/from the stack).

In regard to claim 6, IBM's **System/390** and **Coutant** disclosed the limitations *wherein said linkage service comprises at least one of a calling service and a returning service* (**ESA**: page 5-10 to 5-16; at least PROGRAM CALL and RETURN).

Art Unit: 2124

In regard to claim 7, IBM's System/390 and **Coutant** disclosed the limitation *wherein at least two savearea layouts of said plurality of savearea layouts coexist within a single module* (**ESA**: page 5-14, left column, third paragraph).

In regard to claim 8, IBM's System/390 and **Coutant** disclosed the limitation *wherein said determining and said selecting enable use of a source code that has at least one of the following: a reduced amount of dual path source code* (**ESA**: page 5-14, left column, third paragraph), *natural parameter passing to/from a variety of caller types* (**ESA**: page 5-10 to 5-16, multiple linkage instructions), *and natural exploitation of a large architecture* (**ESA**: page 5-14, left column, third paragraph), *where desired*.

In regard to claim 10, IBM's System/390 and **Coutant** disclosed the limitation *wherein said different machine context organizations comprise different register sizes* (**ESA**: page 5-14, left column, third paragraph).

In regard to claims 11, 15, 16, 17, 18, 20, 21, 22, 26, 27, 28, 29 and 31, the limitations of the claims are related to the claims 1, 5, 6, 7, 8 and 10 and therefore are rejected in the same manner as claims 1, 5, 6, 7, 8 and 10.

In regard to claim 32, IBM's System/390 and **Coutant** disclosed the limitation *wherein said determining is based upon one or more attributes of the calling program* (the

Art Unit: 2124

attributes are whatever instructions which are found in the program and utilize a save area (stack frame)).

In regard to claim 33, IBM's System/390 and **Coutant** disclosed the limitation *further comprising performing said determining and said selecting for a caller program and calling program having similar machine context organizations* (ESA: page 5-14, left column, third paragraph).

In regard to claim 34, IBM's System/390 and **Coutant** disclosed the limitations:

- ♦ *wherein said plurality of savearea layouts coexist within a single executable module* (ESA: page 5-14, left column, third paragraph)
- ♦ *wherein at least one savearea layout of said plurality of savearea layouts is usable when said calling program and said callee program have different machine context organizations* (ESA: page 5-14, left column, third paragraph)
- ♦ *wherein at least one other savearea layout of said plurality of savearea layouts is usable when a calling program and a callee program have similar machine context organizations* (ESA: page 5-14, left column, third paragraph)

In regard to claim 35-37, the limitations are the same as for claim 32-34 above with the exception that claims 35-37 are directed toward a system base claim. However, the

Art Unit: 2124

base claims for both 32-34 and 35-37 are rejected in a similar manner, so claims 35-37 are rejected in the same manner as claims 32-34.

In regard to claims 38-40, the limitations are the same as for claim 32-34 above with the exception that claims 38-40 are directed toward a base claim with additional explicitly stated computing elements. However, the base claims for both 32-34 and 38-40 are rejected in a similar manner, so claims 38-40 are rejected in the same manner as claims 32-34.

3. Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the product System/390 mainframe from IBM (announced September 5, 1990) illustrated here by "System/390 Announcement" (referred to as **System**) and "Principles of Operation: Enterprise Systems Architecture/390" (referred to as **ESA**) in view of **Benson** (USPN 5,598,560).

In regard to claim 1, **System/390** disclosed the limitations:

- ♦ *A method of communicating between programs having different machine context organizations (**System**: page 1, paragraph 6, "The new ESA/390 ...", and page 2, first paragraph under "Major Software Advances"; **ESA**: page 5-10 to 5-16), said method comprising:*
 - ♦ *selecting, at compile time, a linkage service from a plurality of linkage services to be used in communicating between said calling program and a*

callee program, wherein said calling program and said callee program coexist within a single executable module but have different machine context organizations (ESA: page 5-14, left column, third paragraph).

System/390 did not explicitly disclose *determining, at compile time, which savearea layout of a plurality of savearea layouts is to be used to save information relating to a calling program*. **Benson** demonstrated that it was known at the time of invention to require differing abilities to save register information as computers are upgraded from 16-bit to 32-bit to 64-bit processors (column 1, lines 49-52; column 4, line 54 to column 5, line 2). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the **System/390** architecture with a plurality of saveareas in order to increase communication between differing architectures as the system is upgraded from one register size to another as suggested by **Benson's** teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a system which can communicate between old and new programs (ESA: page 5-14, left column, third paragraph) as the system is being designed for the future (**Benson**: column 1, lines 49-52).

In regard to claim 2, IBM's **System/390** and **Benson** disclosed the limitation *wherein said determining is based upon one or more attributes of said callee program* (**Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2; **ESA**: page 5-14, left column, third paragraph; and the above reasoning that old and new programs desire communication).

In regard to claim 3, IBM's System/390 and **Benson** disclosed the limitation *wherein one attribute of the one or more attributes comprises a size of one or more registers to be used by said callee program* (**Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2).

In regard to claim 4, IBM's System/390 and **Benson** disclosed the limitation *wherein said determining is further based on a target architecture mode* (**Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2; and **ESA**: page 5-14, left column, third paragraph).

In regard to claim 5 (now within the independent claim), IBM's System/390 and **Benson** disclosed the limitation *wherein said selecting is based upon the determined savearea layout* (necessary (after considering the above combination of **Benson**) to properly link the saved information of two programs as found in **ESA**: page 5-14, left column, third paragraph, which demonstrates multiple linkage instructions for multiple programs; old and new programs desire to communicate).

In regard to claim 6, IBM's System/390 and **Benson** disclosed the limitations *wherein said linkage service comprises at least one of a calling service and a returning service* (**ESA**: page 5-10 to 5-16; at least PROGRAM CALL and RETURN).

Art Unit: 2124

In regard to claim 7, IBM's System/390 and **Benson** disclosed the limitation *wherein at least two savearea layouts of said plurality of savearea layouts coexist within a single module* (**ESA**: page 5-14, left column, third paragraph).

In regard to claim 8, IBM's System/390 and **Benson** disclosed the limitation *wherein said determining and said selecting enable use of a source code that has at least one of the following: a reduced amount of dual path source code* (**ESA**: page 5-14, left column, third paragraph), *natural parameter passing to/from a variety of caller types* (**ESA**: page 5-10 to 5-16, multiple linkage instructions), *and natural exploitation of a large architecture* (**ESA**: page 5-14, left column, third paragraph), *where desired*.

In regard to claim 9, IBM's System/390 and **Benson** disclosed the limitation *wherein said source code comprises at least one common name usable in referencing one or more analogous fields in at least two savearea layouts of said plurality of savearea layouts to reduce dual path source code* (inherent in two programs communicating as found in **Benson** and **ESA**: page 5-14, left column, third paragraph).

In regard to claim 10, IBM's System/390 and **Benson** disclosed the limitation *wherein said different machine context organizations comprise different register sizes* (**ESA**: page 5-14, left column, third paragraph; and **Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2).

Art Unit: 2124

In regard to claims 11-31, the limitations of the claims are related to the claims 1-10 and therefore are rejected in the same manner as claims 1-10.

In regard to claim 32, IBM's System/390 and **Benson** disclosed the limitation *wherein said determining is based upon one or more attributes of the calling program* (**ESA**: page 5-14, left column, third paragraph; **Benson**: column 1, lines 49-52; column 4, line 54 to column 5, line 2; and the above reasoning that old and new programs desire communication).

In regard to claim 33, IBM's System/390 and **Benson** disclosed the limitation *further comprising performing said determining and said selecting for a caller program and calling program having similar machine context organizations* (**ESA**: page 5-14, left column, third paragraph).

In regard to claim 34, IBM's System/390 and **Benson** disclosed the limitations:

- ♦ *wherein said plurality of savearea layouts coexist within a single executable module* (**ESA**: page 5-14, left column, third paragraph)
- ♦ *wherein at least one savearea layout of said plurality of savearea layouts is usable when said calling program and said callee program have different machine context organizations* (**ESA**: page 5-14, left column, third paragraph)

- ♦ *wherein at least one other savearea layout of said plurality of savearea layouts is usable when a calling program and a callee program have similar machine context organizations (ESA: page 5-14, left column, third paragraph)*

In regard to claim 35-37, the limitations are the same as for claim 32-34 above with the exception that claims 35-37 are directed toward a system base claim. However, the base claims for both 32-34 and 35-37 are rejected in a similar manner, so claims 35-37 are rejected in the same manner as claims 32-34.

In regard to claims 38-40, the limitations are the same as for claim 32-34 above with the exception that claims 38-40 are directed toward a base claim with additional explicitly stated computing elements. However, the base claims for both 32-34 and 38-40 are rejected in a similar manner, so claims 38-40 are rejected in the same manner as claims 32-34.

Response to Arguments

4. As an initial matter, the rejections of claims 1-4, 6-14, 16-25 and 27-40 under 35 U.S.C 112 is withdrawn.

5. Applicant's arguments filed 31 December 2003 have been fully considered but they are not persuasive. Applicant argued **ESA** and **System** fail to disclose: ⁱ⁾ selecting a linkage service at compile time based upon a determined savearea layout; and ⁱⁱ⁾ a

Art Unit: 2124

system with differing machine context organizations. Neither of these points is true.

ESA disclosed a variety of linkage service instructions (page 5-10 to 5-15) instructions for a particular processor type being compiled from source code (inherent process to large, efficiently maintained software applications). **ESA** and **System** did disclose differing machine architectures: System/370 and System/390 (the difference is between these two systems, not the **ESA** and **System** references, both references refer to the System/390, which is an improved version of System/370). This is not simply differing addressing modes as asserted by Applicant. The saveareas of these two architectures are related to their physical architectural differences. Clearly, **Coutant** disclosed differing stack frames (of saved information) or in other words differing saveareas.

Coutant, as indicated in the previous rejection, indicated motivation for using differing saveareas. System/370 being one architecture and System/390 being another architecture, obviously one of ordinary skill at the time of invention would use differing savearea layouts for information as required as discussed by **Coutant**. Differing saveareas allowing only the needed information being saved (to conserve resources) and the linkage services of **ESA** and **System** allowing software for differing systems to work together. Finally, as a side note, Applicant asserts example on page 5 defines "different machine context organization". This is untrue. The cited passage merely defines machine context organizations, not what is required to make them *different*. The cited prior art taken together does disclose the limitations of the claims. Therefore, as this response is believed to address Applicant's points, the rejections are maintained.

Art Unit: 2124

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (703)305-3305. The examiner can normally be reached 7:30am - 5:00pm Monday thru Thursday and 7:30am - 4:00pm every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

William H. Wood
February 24, 2004

Kakali Chaki

**KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**